



CITY OF SANTA BARBARA

COUNCIL AGENDA REPORT

AGENDA DATE: May 8, 2007

TO: Mayor and Councilmembers

FROM: Creeks Division, Parks and Recreation Department

SUBJECT: Mission Creek Fish Passage Project - Caltrans Channel

RECOMMENDATION: That Council:

- A. Adopt, by reading of title only, A Resolution of the Council of the City of Santa Barbara Authorizing the Parks and Recreation Director to Accept Grant Funds and Execute a Grant Agreement for \$155,000 from the California Department of Fish and Game (CDFG) Fisheries Restoration Grant Program for the Mission Creek Fish Passage Project at the Caltrans Channel;
- B. Authorize the Parks and Recreation Director to accept grant funds in the amount of \$180,000 from the Environmental Defense Center (EDC) for the Mission Creek Fish Passage Project at the Caltrans Channel;
- C. Increase appropriations and estimated revenues by \$335,000 in the Creeks Division Capital Fund for the Mission Creek Fish Passage Project at the Caltrans Channel; and
- D. Authorize the Parks and Recreation Director to execute a professional services agreement with Northwest Hydraulic Consultants (NHC) in the amount of \$199,200 to test the performance of conceptual design plans using a flume model and prepare a feasibility report for fish passage project alternatives on Mission Creek at the Caltrans Channel.

EXECUTIVE SUMMARY:

The Creeks Division of the Parks and Recreation Department is working with organizations and members of the community to restore steelhead trout in Mission Creek. Currently, steelhead trout cannot migrate upstream due to barriers within the stream channel. The primary barrier is the Caltrans Channel. The City has received a grant from the CDFG to conduct flume model testing to identify a feasible alternative for modifying the Caltrans Channel to restore this channel reach and make it passable for steelhead trout. The City has also received a grant from the EDC to help fund the flume model testing as well as additional funds to develop preliminary construction plans for restoring the Caltrans

REVIEWED BY: _____ Finance _____ Attorney _____ Name of Additional Department(s) That Need to Review CAR

Agenda Item No. _____

Channel. Due to its prior feasibility work on the Caltrans Channel, NHC has been identified as the most appropriate contractor to perform the flume model testing and identify a feasible design alternative to restore the Caltrans Channel and improve upstream migration conditions for steelhead trout.

DISCUSSION:

Introduction

In the last year, the Creeks Division has worked with the EDC, the CDFG, County of Santa Barbara, and members of the community to move forward a plan to restore a healthy population of steelhead trout in Mission Creek.

Of all the creeks in the City of Santa Barbara, Mission Creek is considered the most viable stream for steelhead trout restoration. Mission Creek contains high quality spawning and rearing habitat within the stream channels in the mid and upper watershed and currently has an existing population of rainbow trout (freshwater version of steelhead trout). Mission Creek also has a documented historic run of steelhead trout, and each year steelhead trout unsuccessfully attempt to migrate and spawn within the lower stream channel.

Currently, there are 12 significant anthropogenic barriers to steelhead trout migration on Mission Creek. The 3 most significant barriers within the lower to mid stream channel are the Caltrans Concrete Channel, the Tallant Road Bridge, and the Highway 192 Bridge. Removing these barriers would provide access for steelhead trout to 4.86 miles of creek channel, which include 2 miles of moderate to high quality spawning and rearing habitat (Stoecker 2002). These 3 barriers are the primary focus of the Creeks Division's restoration efforts on Mission Creek. The following discussion outlines the current effort to modify the Caltrans Channel in order to make it possible for steelhead trout to migrate upstream.

The primary barrier to allowing steelhead trout to migrate upstream and spawn is the Caltrans Channel. It is not only the lowest downstream barrier on Mission Creek, but it is completely impassable by steelhead trout at all flow levels. The channel is almost a mile-long section of flat concrete. During medium to large rain events, fish cannot swim through the channel because the flat concrete bottom provides no resting places (large boulders or curves in the stream that create eddies or backwater), and the water flows too fast for too long of a distance to allow the fish to get upstream. During smaller rain events and normal low flow, the water is too spread out and too shallow (because of the flat concrete channel bottom, there are no low flow channels or pools) for the fish to be able to swim upstream.

The current proposal to restore the steelhead trout population in Mission Creek would modify the existing Caltrans Concrete Channel to allow steelhead trout (an ocean migrating form of rainbow trout) the ability to freely migrate between the ocean and spawning habitat within the mid and upper stream channels.

Caltrans Channel

The Caltrans Concrete Channel includes 2 sections. The upstream channel is approximately 0.3 miles long, extending between Los Olivos and Pedregosa Streets, and the downstream channel is approximately 0.8 miles long, extending between Arrellaga and Canon Perdido Streets. The upstream and downstream channels are separated by a 0.4 mile long natural section extending between Pedregosa and Arrellaga Streets. The channels are trapezoidal in shape and lined with concrete. The channels were constructed in 1934 and 1961 respectively, by the California Department of Transportation (Caltrans) to improve flood control and construct Highway 101.

In June 2005, the EDC, with funds from the Wendy P. McCaw Foundation, hired NHC to undertake a conceptual feasibility study to identify potential alternatives for modifying the Caltrans Channel to make it passable for steelhead trout. In April 2006, NHC finished the draft conceptual design plans and feasibility analysis.

CDFG – Fisheries Restoration Grant Program

In May 2006, in order to continue the conceptual design work initiated by the EDC, the Creeks Division applied for a grant from the CDFG Fisheries Restoration Grant Program. In March 2007, the City was offered a \$155,000 grant from the CDFG to complete the conceptual design work for modifying the Caltrans Concrete Channel to make it passable for steelhead trout. The specific design work to be funded by the CDFG grant consists primarily of flume model testing and selection of a preferred project design that is both feasible and cost effective. As part of the grant application, NHC was identified as the consultant with the necessary experience and expertise to conduct the flume model testing and design work.

Northwest Hydraulic Consultants (NHC)

The Creeks Division proposes that the City contract with NHC to perform the flume model testing and design work for the Caltrans Channel. The scope of work to be completed by NHC includes construction and testing of a 1:20 scale flume model. The flume model will be used to evaluate the sediment transport and hydraulic design of bridges and transition sections. Testing would examine the performance of each transition section under existing (concrete-lined) configuration, and under the proposed design alternatives. Tests would document the performance of the design alternatives for flows up to 100-year discharge and document the sediment transport characteristics through the reach, the channel conveyance capacity, and fish passage conditions.

Upon completion of the flume model testing, a final technical report and feasibility analysis will be completed that will identify a preferred project alternative. In addition, an edited and narrated summary video presenting the key findings of the model study will be provided in DVD format.

A competitive Request For Proposal selection process was not conducted for the flume model testing contract. Instead, NHC was selected as the sole source consultant for a

number of reasons. First, NHC developed the conceptual project design alternatives and performed the initial feasibility analysis for the Caltrans Channel. In addition, NHC is a highly experienced consulting firm with over 30 years of experience that specializes in physical and numerical modeling technology as applied to the field of water resource engineering. NHC is 1 of the few design firms that has the capability to construct and test the flume model and is unique in that it has the largest physical commercial hydraulic modeling operation in western North America. In addition, the CDFG grant application identified NHC as the consultant that would perform the flume model testing on the Caltrans Channel.

Environmental Defense Center (EDC)

The EDC is a local non-profit organization focused on environmental stewardship through litigation and community activism. As described earlier, EDC has been actively involved in the effort to restore the Caltrans Channel for fish passage. More recently, EDC has continued their role in providing funding for design of the Mission Creek Fish Passage Project, through pursuit of grants from private organizations. EDC was recently awarded a grant for \$180,000 from the Annenberg Foundation to conduct fish passage design work on Mission Creek. The grant funds are being provided to the City of Santa Barbara through a unique partnership between the Creeks Division and EDC. The grant will not only assist with funding the flume model testing but will also fund future design work on preliminary construction plans.

Timeline

Once the grant agreements and contract with NHC have been finalized, construction and testing of the flume model of the Caltrans Channel will commence. It is anticipated that flume model testing will be completed by November 2007. If the testing identifies a preferred alternative that meets the fish passage and flood control criteria, it will be possible to move forward with preliminary design plans in early 2008. If testing proves that the identified design alternatives are infeasible, design work will terminate until a feasible project alternative is developed through redesign or possible additional flume model testing.

BUDGET/FINANCIAL INFORMATION:

	Total Grant Funds Provided
CDFG Grant	\$155,000
EDC Grant	\$180,000
Total Cost	\$335,000

Both of the grants, totaling \$335,000, will be utilized for the Mission Creek Fish Passage Project. The first use of the grant funds will be for the preparation of the flume model, by Northwest Hydraulic Consultants, in the amount of \$199,200. The remaining amount of the grant funds, \$135,800, will be used to prepare the preliminary plans for the project, once the conceptual design work and the flume model is completed. When contractor is selected for the preliminary plans, staff will return to Council for approval of the contract.

SUSTAINABILITY IMPACT:

The purpose of the project is to assess the feasibility of modifying the Caltrans channel to allow the federally endangered Southern Steelhead to migrate upstream. If feasible, and the subsequent project design and construction are complete, the project will contribute to local, regional and federal objectives of restoring steelhead within the Mission Creek Watershed.

ATTACHMENT: April 18, 2007 Letter from Environmental Defense Center, regarding funding for Steelhead Recovery in Mission Creek

PREPARED BY: George Johnson, Acting Creeks Supervisor

SUBMITTED BY: Nancy L. Rapp, Parks and Recreation Director

APPROVED BY: City Administrator's Office